Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Cindy Kaplan (Reg. No. 40,043) on 10/08/2010

The application has been amended as follows:

Claim 1 (canceled).

Claim 2 (previously presented): A method for operating a node in a layer 2 network to handle multicast traffic, said method comprising:

receiving at a switch within said layer 2 network, via a first port, an Internet Group Management Protocol (IGMP) join message for a multicast distribution group, said IGMP join message received from a neighbor switch in said layer 2 network;

establishing multicast state information at the switch for said multicast distribution group based on said join message, if such state information has not already been established;

adding said first port to a port list associated with said state information at the switch, said port list being used to select ports for forwarding received multicast traffic of said multicast distribution group;

forwarding said IGMP join message from the switch towards an attraction point of said layer 2 network via a spanning tree defined within said layer 2 network, wherein the attraction point is a root bridge and layer 2 switch in said layer 2 network, and said IGMP join messages are forwarded from the switch towards the attraction point without the use of layer 3 routers;

receiving at the switch, multicast traffic addressed to said multicast distribution group and transmitted from the attraction point; and

forwarding said multicast traffic via a multicast distribution tree formed based on said spanning tree, wherein forwarding said multicast traffic comprises forwarding said multicast traffic towards the root bridge via a port selected according to said spanning tree, the root bridge located at a root of said spanning tree.

Claim 3 (canceled).

Claim 4 (canceled).

Claim 5 (previously presented): The method of claim 2 wherein forwarding said join message comprises: flooding said join message via said spanning tree of said layer 2 network.

Claim 6 (previously presented): The method of claim 2 wherein forwarding said join message comprises: forwarding said join message via one or more ports via which an attraction point advertisement message was previously received.

Claim 7 (canceled).

Claim 8 (previously presented): The method of claim 2 wherein forwarding said multicast traffic comprises: forwarding said multicast traffic via one or more ports via which said join message was received earlier.

Claim 9 (canceled).

Claim 10 (canceled).

Claim 11 (canceled).

Claim 12 (previously presented): A method for operating a node in a layer 2 network to handle multicast traffic, said method comprising:

receiving multicast traffic at a switch within said layer 2 network, from a neighbor node in said layer 2 network, said multicast traffic being addressed to a multicast distribution group having a media access control address assigned thereto; and

forming at the switch a multicast distribution tree based on a spanning tree defined within said layer 2 network;

in response to said multicast traffic, flooding an advertisement message

throughout said layer 2 network via said spanning tree of said layer 2 network, said advertisement message establishing said node as an attraction point for said multicast distribution group;

wherein said advertisement message comprises an IP address of the neighbor node and said media access control address assigned to said multicast distribution group; and

wherein the attraction point is a root bridge and layer 2 switch to which all Internet Group Management Protocol (IGMP) join messages for said multicast distribution group are forwarded via a multicast distribution tree without the use of laver 3 routers.

Claim 13 (deleted).

Claim 14 (deleted).

Claim 15 (canceled).

Claim 16 (previously presented): A non-transitory computer-readable storage medium for use in operating a node in a layer 2 network to handle multicast traffic, said storage medium located at a switch in said layer 2 network and having stored thereon:

code that causes reception within said layer 2 network of, via a first port, an Internet Group Management Protocol (IGMP) join message for a multicast distribution group, said IGMP join message received from a neighbor switch in said layer 2 network; code that causes establishment of multicast state information for said multicast

distribution group based on said join message, if such state information has not already been established;

code that causes addition of said first port to a port list associated with said state information, said port list being used to select ports for forwarding received multicast traffic of said multicast distribution group;

code that causes forwarding said IGMP join message towards an attraction point of said layer 2 network via a spanning tree of said layer 2 network, wherein the attraction point is a root bridge and layer 2 switch in said laver 2 network, and said IGMP join messages are forwarded from the switch towards the attraction point without the use of laver 3 routers;

code that causes reception at the switch of multicast traffic address to said multicast distribution group and transmitted from the attraction point; and

code that causes forwarding multicast traffic via a multicast distribution tree formed based on said spanning tree, wherein forwarding said multicast traffic comprises forwarding said multicast traffic towards the root bridge via a port selected according to said spanning tree, the root bridge located at a root of said spanning tree.

Claim 17 (canceled).

Claim 18 (canceled).

Claim 19 (previously presented): The storage medium of claim 16 wherein code that causes forwarding said join message comprises:

code that causes flooding of said join message via said spanning tree of said layer 2 network.

Claim 20 (previously presented): The storage medium of claim 16 wherein code that causes forwarding said join message comprises:
code that causes forwarding of said join message via one or more ports via which an attraction point advertisement message was previously received.

Claim 21 (canceled).

Claim 22 (previously presented): The storage medium of claim 16 wherein code that causes forwarding of said multicast traffic comprises:
code that causes forwarding of said multicast traffic via one or more ports via which said join message was received earlier.

Claim 23 (canceled).

Claim 24 (canceled).

Claim 25 (canceled).

Claim 26 (previously presented): A non-transitory computer-readable storage medium for use in operating a node in a layer 2 network to handle multicast traffic, said storage medium located at a switch in said layer 2 network and having instruction stored

thereon, said instructions comprising:

code that causes reception of multicast traffic from a neighbor node in said layer 2 network, said multicast traffic being addressed to a multicast distribution group having a media access control address assigned thereto; and

code that causes forming a multicast distribution tree based on a spanning tree defined within said layer 2 network;

code that causes, in response to said multicast traffic, flooding of an advertisement message throughout said layer 2 network via a spanning tree of said layer 2 network, said advertisement message establishing said node as an attraction point for said multicast distribution group;

wherein said advertisement message comprises an IP address of the neighbor node and said media access control address assigned to said multicast distribution group; and

wherein the attraction point is a root bridge and layer 2 switch to which all Intemet Group Management Protocol (IGMP) join messages for said multicast distribution group are forwarded via a multicast distribution tree without the use of layer 3 routers.

Claim 27 (deleted).

Claim 28 (deleted).

Claim 29 (canceled).

Claim 30 (previously presented): Apparatus for operating a node in a layer 2 network to handle multicast traffic, said apparatus comprising a switch within said layer 2 network, the switch comprising:

a processor that executes instructions; and

a memory device that stores said instructions, said instructions comprising:

code that causes reception within said layer 2 network of, via a first port, an Intemet Group Management Protocol (IGMP) join message for a multicast distribution group, said IGMP join message received from a neighbor switch in said layer 2 network; and code that causes establishment of state information for said multicast distribution group based on said join message, if such state information has not already been established;

code that causes addition of said first port to a port list associated with said state information, said port list being used to select ports for forwarding received multicast traffic of said multicast distribution group;

code that causes forwarding said IGMP join message towards an attraction point said layer 2 network via a spanning tree defined within said layer 2 network, wherein the attraction point is a root bridge and layer 2 switch in said laver 2 network, and said IGMP join messages are forwarded from the switch towards the attraction point without the use of laver 3 routers;

code that causes reception at the switch of multicast traffic addressed to said multicast distribution group and transmitted from the attraction point;

code that causes forwarding multicast traffic via a multicast distribution tree formed based on said spanning tree, wherein forwarding said multicast traffic comprises forwarding said multicast traffic towards the root bridge via a port selected according to said spanning tree, the root bridge located at a root of said spanning tree.

Claim 31 (canceled).

Claim 32 (canceled).

Claim 33 (previously presented): The method of claim 2 wherein a media access control address is assigned to said multicast distribution group.

Claim 34 (canceled).

Claim 35 (previously presented): The method of claim 12 further comprising periodically flooding said advertisement via said spanning tree.

Claim 36 (previously presented): The method of claim 12 further comprising maintaining a source port list and an outgoing port list for each flow of said multicast traffic.

Claim 37 (canceled).

Claim 38 (canceled).

Claim 39 (previously presented): The apparatus of claim 30 wherein said code that causes forwarding of said join message comprises code that causes flooding of said join message via said spanning tree of said layer 2 network.

Claim 40 (previously presented): The apparatus of claim 30 wherein code that causes forwarding said join message comprises: code that causes flooding said join message via said spanning tree of said layer 2 network.

Claim 41 (previously presented): The apparatus of claim 30 wherein code that causes forwarding of said join message comprises: code that causes forwarding of said join message via one or more ports via which an attraction point advertisement message was previously received.

Claim 42 (previously presented): The apparatus of claim 30 wherein code that causes forwarding of said multicast traffic comprises: code that causes forwarding of said multicast traffic via one or more ports via which said join message was received earlier.

Claims 1,3-4, 7, 9-11, 15, 17-18, 21, 23-25, 29, 31-32, 34, 37-38 have been canceled.

Claims 13-14, 27-28 have been deleted.

Allowable Subject Matter

Claims 2, 5-6, 8, 12, 16, 19-20, 22, 26, 30, 33, 35-36, 39-42 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sulaiman Nooristany whose telephone number is 571-270-1929. The examiner can normally be reached on Monday Through Friday 7:30 am to 5:00 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Pwu can be reached on 571-272-6798.

/S. N./

Examiner, Art Unit 2478

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2446

10/08/2010